

THE DEVELOPMENT AND EVALUATION OF AN INSTRUMENT  
TO MEASURE ATTITUDES OF COLLEGE STUDENTS  
TOWARD COOPERATIVENESS

by

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## INTRODUCTION

### Problem and Background

There are few, if any, types of human behavior which are unaffected by attitudes. Yet attitudes are seldom expressed directly, and sometimes behavior, which must conform with the social mores, is a poor indication of the attitudes which a person possesses. Those persons who earn their living by working with people need a full understanding of human attitudes and their effect upon behavior. Toward securing such an understanding there have been many attempts to develop a measuring instrument for attitudes. These attempts have made evident many difficulties. Foremost among the problems is the question of validity. How can we be sure that the instrument is measuring just one attitude and not a combination of them? The question of the interpretation of the measurement is also a problem when working with attitudes. Does the instrument produce an objective measurement which can be interpreted and duplicated by anyone who desires to use it? Finally, it is most difficult to obtain a true expression of attitude free from stereotype.

The purpose of this thesis is to devise an instrument which will measure the willingness of the individual to cooperate with certain groups as indicated by his expectation of cooperation from members of these groups. It is the desire of

the desire of the author to develop a measure which will produce consistent or reliable results, elicit an expression of attitudes as free as possible from stereotype, and be valid insofar as can be determined.

### Survey of Experimental Background

The field of opinion-attitude testing has been the subject of many theories, techniques, and criticisms. A few of the resultant studies will be reviewed here.

Perhaps the most thorough study of the work which has been done in the field of attitude testing is McNemar's (12) "Opinion-Attitude Methodology". For a definition of attitude, he says:

The common element of most definition of social attitude is that such an attitude is a readiness or tendency to act or react in a certain manner. No one has ever seen an attitude; an attitude, however, is real to its possessor, is an abstraction, the existence of which is inferred either from nonverbal, overt behavior, or from verbal or symbolic behavior.

Then, for further clarification of his position in the opinion-attitude controversy, he states:

It should be understood from the outset that no claim is made herein to the effect that attitude measurement permits more than a rank ordering of individuals.

McNemar (12) states that there are three fundamental requirements which all techniques for attitude measurement must meet:

If one is attempting to measure or gauge something, the accuracy or error of measurement must be known. This problem of reliability is common to the physical, the biological, and the social sciences. A very large number of the variables of science are measured indirectly, and

such indirect measurement raises the question of validity--the extent to which the instrument is measuring the variable it was designed to measure rather than reflecting some other variable or variables. It is nearly always desirable that a given instrument should measure just one dimension, i.e., involve one continuum.

His explanation of these three fundamentals is, in regard to determining validity:

Presumptive evidence can be secured by learning whether the scale differentiates between groups which on a priori grounds should differ in their opinion about the given issue.

in regard to factors which affect validity and/or reliability;

Stereotypes and emotionally charged words or phrases, though possibly leading to greater consistency, are not conducive to high validity and reliability.

and, in regard to the single continuum;

Measurement implies that one characteristic at a time is being quantified. The scores on an attitude scale are most meaningful when it is known that only one continuum is involved. Only then can it be claimed that two individuals with the same score or rank order are quantitatively and, within limits, qualitatively similar in their attitude toward the given issue.

Later in the article he discusses scaling and the Guttman approach to it:

The aim of scaling is the development of construction of a 'measuring' device which will distribute individuals along a continuum running from highly unfavorable through neutral to a sometimes called discriminability, which if required will depend upon the fineness with which one wishes to differentiate between individuals. . . . .

A new approach to scaling is found in a 1944 paper by Guttman who proposes a rational scheme, based on matrix algebra, for selecting items for scales to measure any type of psychological trait. The chief merit of the method, which is simple in application, is that it leads to elimination of items which are not on the principal continuum,

thus assuring that a single dimension is involved in the retained items. Heretofore, such assurance could be obtained only by factor analysis methods, which are so laborious as to discourage their use.

Three other articles which are applicable to this study are those by Hammond, Guttman, and Loevinger.

Hammond (5) considers an attitude to be a "source of energy, or an affective state, capable of producing error in perception and recall". He is concerned not with a definition of attitude, but only with its effect and, particularly, the effect of systematic error in perception and recall. In his "error-choice" technique, each question on the test has two answers, both wrong or the truth being indeterminable. The subject is forced into error. Hammond suggests that "error-choice" is "a technique adapted to the purpose of eliminating the factor of 'attitude test set', inasmuch as the respondents are unaware of the implications of their error-choices."

Guttman (4) has developed the Cornell Technique of scale analysis. This method has received much criticism, both favorable and unfavorable. He has described his method as follows:

The Cornell Technique is a procedure for testing the hypothesis that a universe of qualitative data is a scale for a given population of people, using the scalogram approach.

The universe is said to be scalable for the population if it is possible to rank the people from high to low in such a fashion that from a person's rank alone we can reproduce his response to each of the items in a simple fashion.

Loevinger (11) says that a homogeneous test is one in which all the items on a test measure the same complex of functions. There are only two types of tests which satisfy this requirement,

cumulative and differential, which are here defined:

In a perfectly homogeneous cumulative test when the items are arranged in order of decreasing popularity, each person from some defined population will score plus up to an item characterizing him and minus on all subsequent items.

In a perfectly homogeneous differential test, there is an order of the items such that each person from some defined population will score minus on all items up to a point characterizing him, plus on succeeding items up to another point characterizing him, and minus on all subsequent items.

Leovinger further states that, "The concept of homogeneity has been developed as an alternative to the concept of reliability, and the degree of homogeneity of a test, like the degree of reliability, is intended to be stated numerically".

#### Summary

From this review of theories and methods a general statement of the problem may now be made. McNemar's (12) review, "Opinion-Attitude Methodology", has pointed out the weaknesses of the earlier attitude tests. The newer techniques discussed offer suggestions for improvement. Using the suggestions of McNemar, Guttman, and Hammond, an attempt was made to develop a valid measurement of attitudes toward cooperativeness among college students. It was hoped to make this measurement reliable and easy to administer and score.

To achieve these ends an indirect measuring scale in the form of dialogues characterizing a number of individuals as showing various degrees of cooperativeness was constructed.

First, it was determined whether or not these individuals actually represented different degrees of cooperativeness to the reader. Then each character was assigned a score corresponding to his position in a scale of cooperativeness.

Next, the subjects' attitudes toward the cooperativeness of other groups with which they might need to work was investigated. This was accomplished by having the student identify the characters in the scale with various groups. In accordance with Hammond's (5) definition of attitude it was expected that the subjects' attitudes toward the various organizations would be reflected in their evaluation of them.

#### PLANNING, POPULATION, AND PROCEDURE

##### Construction and Scaling of the Test

The test was constructed in two sections. The first and main section contained the minutes of three meetings of a fictitious Community Planning Committee which was composed of representatives from ten civic groups that would be found in almost any typical community. Each dialogue portrayed a distinct meeting and the discussion of a different topic. The characters were designated by number only. An effort was made to portray, through the dialogue, as far as possible, only one personality variable, this being cooperativeness (Appendices A, B, and C). The three sets of minutes were planned as three

independent scales. The purpose of having three scales was to provide a check on the reliability and validity of the ratings.

The first task was to determine whether or not the characters actually represented to the reader different degrees of cooperativeness, and if so, to assign a weighted score or rating so as to make a quantitative treatment of the results possible. Three psychology classes were used in determining whether or not the characters could be arranged in a scale. Each member of the classes was given the three dialogues and asked to check, on an attached check list (Appendix D), each character whom he would select to work on a committee with him. Three methods were applied to this data in order to evaluate the students' reactions to the various characters.

First the scalability of the instrument was tested by a technique modeled after Guttman's.

The responses of the students were sorted into response pattern groups. These were then arranged on a scale so as to make it possible to determine by observation the degree of consistency in the response patterns. The reader may see these scales in Figs. 1, 2, and 3.

Figure 1, dealing with the Relief Program dialogue, was made by arranging the lists of characters which the students indicated they would select as committee members so that as far as possible the lists including the least popular characters were at the left end of the scale and the lists containing only the more popular were at the right end. Each column represents the choices made by one member of the class, and the rows represent

the number of students who selected each character. For example, the first columns of O's in the scale for Class I in Fig. 1 are the responses of the two students who would select all five of the characters to work with them on a committee. The next three columns represent the three students who would select characters 1, 2, 3, and 4, but not 5. The rest of the figure can be similarly read. An inspection of the scale for Class I shows that only five individuals who did not select character 1 and only two who did not select character 4 would select any other character to work with them. Likewise, nearly all who selected character 2 also selected characters 1 and 4. Character 5 fits the scale least since there are six people who selected character 5 but did not also select character 2. Character 3 was selected by only one student who did not select at least three of the other characters.

It will be seen by inspection of Fig. 1 that characters 1 and 4 were considered to be the most cooperative since they were selected by nearly all the students as desirable committee members.

A high degree of consistency between classes is evident from a comparison of the scales for the three classes which made the ratings on the characters for the Relief Program dialogue. In each case there is a strong tendency for characters 1 and 4 to be chosen by nearly everyone; for character 2 to be also chosen if only three are selected; and for characters 3 and 5 to be chosen only when at least four characters were selected.

Inspection of Figs. 2 and 3 shows that the characters in

## Class I

## Characters

1	oooooooooooooooooooooooooooo	ooo
2	oooooooooooooooooooo	ooo oo
3	ooooo	oo o
4	oooooooooooooooooooooooooooo	
5	oo oooo ooooo o o	

## Frequency

## Class II

## Characters

1	oooooooooooooooooooooooooooo	
2	oooooooooooooooooooo	o oo
3	ooo	oooo oooo
4	oooooooooooooooooooooooooooo	oo
5	oooooo	oooo oo

## Frequency

## Class III

## Characters

1	oooooooooooooooooooooooooooo	
2	oooooooooooooooooooo	o oo
3	ooo	oooo oooo
4	oooooooooooooooooooooooooooo	oo
5	oooooo	oooo oo

Fig. 1. Scale showing number of times each character of Relief Program Dialogue was chosen during first character rating.

Class I

Character	Frequency
1	oooooooooooooooooooooooooooo
2	ooooooooooooo
3	ooooooooooooooooooooooooooooo
4	
5	oooo oooo

## Class II

```

Character
1  ooooooooooooooooooooooooooooooooooooo
2  ooooooooooooooooooooooooooooooooooooo
3  ooooooooooooooooooooooooooooooooooooo
4  ooooooooooooooooooooooooooooooooooooo
5  ooooooooooooooooooooooooooooooooooooo
Frequency

```

Class III

```

Character 1  oooooooooooooooooooooooooooooooooo
          2  oooooooooooooooooooooooooo
          3  ooooooooooooooooooooooooooooo
          4  oo
          5  oooooooooo
Frequency

```

Fig. 2. Scale showing the number of times each character on Summer Camp Dialogue was chosen during first character rating.

## Class I

Character	
1	oooooooooooooooooooooooooooooooooooo
2	oooooooooooo                  oooo  o  oo
3	oo                                  ooo
4	oooooooooooooooooooo
5	oo
6	oooooooooooooooooooooooooooooooooooo  oo
Frequency	

## Class II

Character	
1	oooooooooooooooooooooooooooooooooooo  o
2	oooooooooooooooo                  oooooo  ooo  o
3	ooo                                  oo          o
4	oooooooooooooooooooooooooooo          ooo
5	oo  oo
6	oo
Frequency	

## Class III

Character	
1	oooooooooooooooooooooooooooooooooooo
2	oooooooooooooooooooooooooooo          ooo
3	ooooo                                  o
4	oooooooooooooooo                  oooo
5	o  oo
6	oooooooooooooooooooooooooooooooooooo
Frequency	

Fig. 3. Scale showing the number of times each character on the Teen-Club Dialogue was chosen during first character rating.

the Summer Camp and Teen Club dialogues were selected in a rather definite order just as in the dialogue discussed above.

In each case certain characters show almost equal popularity, but within the group there is a marked difference between the least and the most popular. This seems to meet Guttman's criteria for scalability. In other words, the agreement between classes indicates a consistent difference between the popularity of the various characters in the dialogue.

The characters in each dialogue were also ranked according to the frequency with which they were chosen by the members of each class. The correlations between ranks assigned in different classes varies from .90 to .92 for the Relief Program and Summer Camp programs and from .94 to .97 for the Teen Club program as shown in Table 1.

Table 1. Correlation of character ratings obtained by rank difference method.

Classes	Summer Camp Dialogue	Teen-Club Dialogue	Relief Program Dialogue
I and II	R = .90	R = .97	R = .92
I and III	R = .92	R = .97	R = .90
II and III	R = .92	R = .94	R = .92

This confirms the scalogram technique in indicating a consistent difference from group to group in the judged cooperativeness of the characters.

As a third check for consistency of the characters in the dialogue as evaluated by the readers, the probabilities of no difference between classes was calculated from Chi square. The results were as follows: for the Summer Camp dialogue characters - .75, for the Teen Club dialogue characters - .99, and for the Relief Program dialogue characters - .98.

The scalogram analysis, the correlation coefficient, and the Chi square test all indicate high probabilities for differences between characters as regards cooperativeness and for consistency between classes in judging them. The agreement between the results of the three methods seems to indicate that the instrument is sufficiently reliable.

Although Likert (10) has argued that ranks are as reliable as other scale values, it was thought desirable to secure a coded score based on three scores for this study. The weighted score or rating for each character was obtained by first computing the three scores given to each character by each of the three classes. These three scores were then averaged and the coded score secured by adding to each a value which would make the lowest negative score equal to a plus .50. These numbers were doubled and rounded to the nearest half in such a manner that the most popular character, chosen on the basis of cooperativeness, was given the smallest score (Table 2). These scale values were used throughout the evaluation procedure.

Table 2. Coded scores for dialogue characters.

Characters	Summer Camp Dialogue					
	1	2	3	4	5	6
Class I z score	1.23	-.25	1.08	-1.88	-.55	
Class II z score	1.13	.47	1.41	-2.33	-.71	
Class III z score	.88	.31	.88	-1.64	-.44	
Combined Classes coded score	2.5	4.5	2.5	8.5	5.5	
Relief Program Dialogue						
Class I z score	.84	.10	-.74	1.04	-.33	
Class II z score	.92	.10	-.55	.92	-.41	
Class III z score	.88	.39	-.31	.61	-.23	
Combined Classes coded score	1.	2.5	4.	1.	3.5	
Teen Club Dialogue						
Class I z score	1.23	.10	-1.08	.10	-1.64	1.23
Class II z score	.81	.20	-.99	.28	-1.64	1.41
Class III z score	.77	.41	-.99	.10	-1.41	.99
Combined Classes coded score	1.5	3.	5.5	3.	6.5	1.

### The Population

The population participating in the study consisted of four psychology classes. The first three, taught by Dr. D. F. Showalter, were the same classes which had participated in the character ratings. There were two General Psychology classes and one Psychology of Advertising and Selling class. The fourth class was a Social Psychology class taught by Dr. R. C. Langford.

The total number of students who took some part in the study was 141. The final rating was too long to be completed in one class period. Therefore, it was divided into two sections, and the sections were presented approximately a week apart. Due to absences and the failure of students to identify themselves, only 107 students completed both ratings and were included in the study. All students who completed the ratings were included.

### The Procedure of Evaluation

Hammond (5), in his presentation of the "error-choice" method, has shown that "responses may differ for an item depending on whether that item is presented as an 'attitude test' item or as an 'information test' item". In order to obtain, as far as possible, unbiased results, the test material was presented to the students not as an attitude measurement, but as an attempt to test the belief that definite personality traits and modes of behavior are acquired by association with certain groups; and inversely, group affiliation can be determined by noting modes of

behavior. To secure this and the following instructions were given:

#### PERSONALITY TRAITS AND GROUP MEMBERSHIP

Some experimenters believe that group membership gives a person such definite personality characteristics that it is possible to determine the groups with which one is most closely identified by a study of a person's speech and actions. We wish your cooperation in further testing this proposition. Please read the material and carry out the directions.

The three dialogues were presented first. Attached to each dialogue was a list of the ten civic organizations who, it was stated, had elected representatives to the Community Planning Committee. The student was instructed to read the dialogue and then put each character's designated number beside the organization to which he, the student, thought that character belonged (Appendix E). The results of this rating are the main concern of the study.

As a basis of evaluation for the Character Rating Device, the Organization Rating Scale and personal data sheet were presented as the final section of the study. The directions for the Organization Rating Scale were as follows:

1 always cooperative; 2 fairly cooperative;  
3 mildly cooperative; 4 inclined to be uncooperative;  
5 definitely uncooperative; 6 always uncooperative

Think of someone you know who is a member of the Rotary Club and whom you consider a fairly representative member of that organization. Now, using the scale above, rate this particular individual by use of the appropriate numbers in accordance with the way you would expect him to act in each of the following situations: Planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty stricken,

and orphan \_\_; establishing an adult education program in the high school \_\_.

The same instructions were used for each of the ten civic organizations (Appendix F).

In an attempt to obtain a more true expression of attitude, the student was asked to use an alias. His real name was not known to the author or the instructor of the class.

## RESULTS AND CONCLUSIONS

### Presentation of Results

The completed study included three Character Rating Devices attached to the three sets of minutes and the Organization Rating Scale to be scored. All ratings and the personal data for each student were recorded on a separate card. From these cards the tabulations of data were made and used for the comparisons of the various groups. A frequency distribution of characters chosen by each group as belonging to a specific organization was made. Then, by employing the coded scores, a mean rating was obtained for each of the ten civic groups. Since the results on any one church group were too small to be used, the five church groups were combined into one group and referred to as "All Churches". The mean character rating scores for each group are recorded on Tables 3, 4, and 5.

Table 3. Average ratings for civic organizations as obtained from character ratings for summer camp dialogue.

Organization	Fresh		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	5.2	28	4.7	20	4.5	22	5.5	31	4.4	14	4.7	47	4.2	27
P.T.A.	3.9	26	3.5	25	3.5	28	3.9	33	3.6	13	3.6	50	3.4	34
Police Department	7.8	21	7.9	24	8.0	31	7.9	28	7.9	16	7.9	52	8.0	26
Chamber of Commerce	4.6	16	3.2	19	3.4	20	3.9	20	3.3	15	3.5	34	3.8	24
Board of Education	3.3	30	4.1	26	3.7	27	3.4	33	3.9	33	3.6	17	3.7	26
All Churches	4.1	45	4.4	37	4.5	51	3.8	48	5.0	25	4.4	95	4.6	52

Table 4. Average ratings for civic organizations as obtained from character ratings for relief program dialogue.

Organization	Fresh.		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	2.6	31	2.8	27	2.5	34	3.0	36	2.6	18	2.5	61	2.7	36
P.T.A.	3.1	23	2.7	23	3.0	29	2.8	25	2.8	14	2.9	50	2.9	27
Police Department	3.1	19	3.1	21	3.2	13	2.8	21	2.8	9	2.8	51	3.3	16
Chamber of Commerce	1.6	31	1.3	31	1.5	36	1.1	38	1.4	20	1.4	68	1.4	36
Board of Education	1.9	31	2.3	29	1.8	32	2.0	38	3.8	17	2.0	63	1.9	34
All Churches	2.3	32	2.5	19	2.9	30	2.5	37	3.1	18	2.6	51	2.6	40

Table 5. Average ratings for civic organization as obtained from character ratings for teen-club dialogue.

Organization	Fresh.		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	3.4	31	3.5	29	3.9	31	3.9	36	3.4	17	3.4	63	3.9	32
P.T.A.	2.9	32	2.2	30	2.5	34	2.6	37	3.1	20	2.6	69	2.7	33
Police Department	4.9	29	6.2	26	6.5	32	5.3	33	6.2	17	5.8	57	5.3	31
Chamber of Commerce	3.8	31	2.8	29	2.5	34	3.1	37	2.9	17	3.7	63	2.6	34
Board of Education	1.5	31	1.9	28	3.4	34	2.1	36	2.0	17	2.1	66	2.2	34
All Churches	3.5	41	4.9	37	3.4	47	3.7	52	3.2	29	3.5	85	3.8	54

In the Organization Rating Scale no attempt was made to avoid a stereotyped response. If the Character Rating Device has succeeded in reducing the effect of formalized expression there should be a difference in the ratings obtained on Tables 3-5 and Tables 6-8. In Tables 6, 7, and 8 will be found the mean score for each organization as obtained from the Organization Rating Scale.

Table 6. Average ratings for civic organizations as obtained from the graduated rating scale for summer camp dialogue.

Organization	Fresh.		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	1.7	34	1.7	25	1.7	35	1.6	37	1.8	19	1.7	61	1.9	36
P.T.A.	1.5	34	1.4	31	1.3	35	1.3	39	1.4	19	1.6	54	1.3	37
Police Department	2.0	34	1.9	31	1.9	33	1.8	38	2.3	19	2.1	67	1.9	35
Chamber of Commerce	1.5	34	1.5	31	1.8	36	1.4	39	1.6	20	1.4	67	1.6	37
Board of Education	1.7	11	2.3	7	1.4	5	1.3	7	1.0	2	1.6	16	1.5	6
All Churches	1.8	164	1.8	140	1.9	153	1.7	187	2.2	80	1.7	309	1.9	167

Table 7. Average ratings for civic organizations as obtained from the graduated rating scale for relief program dialogue.

Organization	Fresh.		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	1.1	34	2.2	24	1.9	35	1.8	38	1.8	19	2.0	62	1.9	36
P.T.A.	1.7	11	2.1	18	2.3	21	1.9	20	2.7	11	2.3	29	2.3	21
Police Department	2.1	33	2.3	31	2.7	31	2.1	38	2.7	18	2.4	65	2.2	35
Chamber of Commerce	2.1	33	1.8	31	1.7	35	1.8	38	1.7	19	1.9	67	1.8	36
Board of Education	2.4	34	2.7	29	3.1	34	3.0	37	3.0	20	3.2	67	3.0	36
All Churches	1.7	168	1.6	140	1.8	152	1.5	187	2.0	80	1.6	307	1.8	168

Table 8. Average ratings for civic organizations as obtained from the graduated rating scale for teen-club dialogue.

Organization	Fresh.		Soph.		Jr. & Sr.		Below Age 21		Above Age 24		Men		Women	
	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N	Av.	N
Rotary Club	1.9	34	2.5	25	2.1	35	1.9	37	2.2	19	2.1	62	2.0	36
P.T.A.	1.7	34	1.8	31	1.8	35	1.5	39	2.2	19	1.9	67	1.8	37
Police Department	2.2	34	2.1	30	2.3	33	2.1	38	2.6	19	2.3	66	2.3	35
Chamber of Commerce	1.8	34	1.8	31	2.3	36	1.7	39	2.0	19	1.8	68	2.0	37
Board of Education	2.5	31	1.9	29	2.2	34	2.1	36	2.3	20	2.2	64	2.4	36
All Churches	2.4	165	2.2	137	2.3	153	2.3	179	2.4	81	2.3	304	2.3	167

For purposes of comparison the test was divided into the two parts, the original dialogues with attached Character Rating Device, and the conventional Organization Rating Scale. To determine whether or not there was any difference in the results on the two parts, Pearson correlation coefficients were calculated. The ratings by the freshmen and sophomores of the three activities on the Organization Rating Scale were calculated. The results, .46 for the Teen Club, .55 for the Summer Camp, and .48 for the Relief Program, were markedly lower than the corresponding correlations of .87, .87, and .80 obtained for the same group on the Character Rating Device (Table 9).

Table 9. Correlation of ratings, freshmen and sophomores.

	Organization Rating Scale		:	Character Rating Device	
	r	Level of significance		r	Level of significance
Teen-Club	.46	Not significant		.87	5%
Summer Camp	.55	Not significant		.87	5%
Relief Program	.48	Not significant		.80	5%

In other words, the ratings by the freshmen and sophomores using the Character Rating Device are so much alike that they do not differ significantly. On the other hand, the ratings by means of the Organization Rating Scale are so dissimilar that accuracy of prediction from one to the other is negligible.

The results obtained from use of the Character Rating Device were compared with those secured from the Organization Rating Scale. For the freshmen the correlation coefficients between the results obtained by the two methods were:  $-.04$  on the Teen Club,  $.71$  on the Summer Camp, and  $-.39$  on the Relief Program. For the sophomores the correlation coefficients were:  $.42$  on the Teen Club,  $.35$  on the Summer Camp, and  $.38$  on the Relief Program. These results are presented in Table 10. It will be seen that in no case was there a high degree of similarity between the ratings made on the Character Rating Device and the Organization Rating Scale. In other words, the Character Rating Device is not measuring the same thing that the Organization Rating Scale measures.

Table 10. Comparison of ratings obtained from the dialogues and organization rating scale (Pearson).

	Freshmen		* Sophomores	
	r	Level of significance	r	Level of significance
Teen Club	-.04	Not significant	.42	Not significant
Summer Camp	.71	Not significant	.35	Not significant
Relief Program	-.39	Not significant	.38	Not significant

Chi square was also employed to determine whether or not there was a real difference between the attitudes toward the different organizations when rated by use of the Character Rating Device and when rated by the Organization Rating Scale. The results are shown in Table 11.

Table 11. Significance of rating of characters and rating of organizations by freshmen.

Methods	Chi square	p*
Organization Rating Scale	14.93	.15
Character Rating Device	162.09	.01

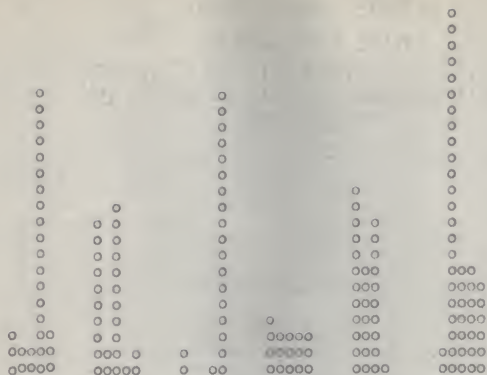
\* P refers to the probability that the obtained differences could have arisen by chance alone.

From this it appears that the differences between ratings given to the various organizations on the Organization Rating Scale might have been the result of chance alone. Whereas there is much less than one chance in one hundred that the ratings assigned by the Character Rating Device are not real differences in attitudes. That is, as indicated both by intercorrelation and Chi square, the Character Rating Device reliably discriminates between the attitudes toward the different organizations, whereas the Organization Rating Scale does not.

In order to further determine whether the ratings on the Character Rating Device indicate true attitudes, the patterns of responses toward different organizations were studied. The various organizations had similar patterns in the assignment of characters to them by each group.

The patterns of choice were quite consistent from group to group when considering the same dialogue; but there were significant differences in rating certain organizations in connection with different programs. For example, the Chamber of Commerce was rated highly cooperative on the Relief Program, (Fig. 6 & 7) but there seemed to be a lack of decision in connection with its cooperativeness in regard to the Summer Camp (Fig. 4 & 5). On the other hand, the Police Department was rated more cooperative in connection with the Relief Program than on the Summer Camp.

To determine the degree of consistency in the rating of the three activities (Teen-Club, Summer Camp and Relief Program) by all of the groups tested, Pearson correlation coefficients were used. The results were as follows: between the ratings made by




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13254	13254	13254	13254	13254	13254
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Rotary Club	Parent-Teachers Assoc.	Police Department	Chamber of Commerce	Board of Educ.	All Churches
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Fig. 4. Response pattern for freshmen in assigning characters from the Summer Camp dialogue. The characters are designated by the numbers at the foot of the columns and arranged in the order of their cooperativeness rating. Characters 1 and 3 have identical ratings.







the freshmen and sophomores, coefficients of .87 for the Teen-Club, .87 for the Summer Camp, and .80 for the Relief Program were obtained; between the men and women coefficients of .88 for the Teen-Club, .91 for the Summer Camp, and .97 for the Relief Program were obtained; between the age groups, below 21 and above 24, the coefficients were .93 for the Teen-Club, .92 for the Summer Camp, and .86 for the Relief Program. These results may be seen in Table 12.

Table 12. Correlation of ratings on the dialogue by various groups. (Pearson)

	Freshmen vs. Sophomores		Men vs. Women		Below 21 vs. Above 24	
	r	Level of significance	r	Level of significance	r	Level of significance
Teen-Club	.87	5%	.88	5%	.93	1%
Summer Camp	.87	5%	.91	1%	.92	1%
Relief Program	.80	5%	.97	1%	.86	1%

Since these correlations are all significant, they are further evidence of a consistency of attitudes as measured by the Character Rating Device.

In order to determine the validity of the ratings as measures of attitude toward the organizations rather than as a reflection of stereotyped thinking; the ratings on the Teen-Club

and Summer Camp, which are alike in being children's programs, were compared with the ratings on the Relief Program, which would be expected to arouse a different sort of attitude. Pearson correlation coefficients were secured.

First the correlations between the Teen-Club and Summer Camp results were compared. The coefficients were .86 for the freshmen, .86 for the sophomores, and .99 for the juniors and seniors. Next, the Teen-Club and Relief Program ratings were compared with resulting correlation coefficients of .30 for the freshmen, .58 for the sophomores, and .67 for the juniors and seniors. Lastly the Summer Camp and Relief Program ratings were compared. The results were a correlation coefficient of .42 for the freshmen, .60 for the sophomores, and .76 for the juniors and seniors (Table 13).

Table 13. Correlation between ratings secured from dialogues (Pearson).

	Teen-Club vs. Summer Camp		Teen-Club vs. Relief Program		Summer Camp vs. Relief Program	
	r	Level of significance	r	Level of significance	r	Level of significance
Freshmen	.86	5%	.30	Not significant	.42	Not significant
Sophomores	.86	5%	.58	Not significant	.60	Not significant
Juniors and Seniors	.99	1%	.67	Not significant	.76	Not significant

This shows a correlation between the children's programs which is significant or highly significant. But in every case, the correlation is not significant between the Relief Program and either of the children's programs. This indicates that the ratings are a reflection of attitude, rather than stereotyped thinking about the organization.

In studying the data to determine the consistency of the ratings, it was found that there was a positive correlation between the ratings given the various organizations by the different groups. This and other data presented with it was interpreted as evidence of the consistency or reliability of the measurement of attitudes.

#### Summary and Conclusions

The study had as its purpose the development of a valid and reliable instrument for measuring insofar as possible free from stereotype and formalized expression, the attitudes of college students toward cooperativeness.

The reliability of the cooperativeness values assigned to the various characters in each of the dialogues was discussed on pages 10 ff. The characters in the different dialogues seem consistently to present different degrees of cooperativeness to the reader, so that the dialogues formed scales by means of which reliable ratings could be made.

The consistency of the attitudes expressed toward the different community organizations by use of the Character Rating

Device as shown in Table 12 is indicated by intercorrelations that are significant at the percent or percent level in each case. This would indicate a sufficient degree of reliability for comparison of groups, but perhaps not high enough for comparison of individual attitudes.

Since there is no accepted criterion with which to correlate the judgments of cooperativeness made by this instrument, validity must be inferred from agreement of judgments with differences in the situations being evaluated. In Table 13 the correlation is much higher between the two activities for children--the Teen-Club and Summer Camp--than it is between the Relief Program, an adult activity, and either of the other activities.

We can also say that the ratings for the civic groups obtained from the dialogues are more discriminating than the ratings obtained from the graduated rating scale. As shown in Table 11, the ratings of the various organizations by means of the organization rating scale do not differ significantly from chance, but ratings made by use of the dialogues show a difference much greater than that needed to reach the one percent level of confidence. The test differentiates reliably between attitudes toward different organizations and also between attitudes toward different activities.

In summary, data have been presented showing that the dialogue character ratings measure attitudes regarding cooperativeness consistently from group to group. There was also presented evidence that this instrument measures an attitude at least relatively free of stereotype and formalized expression.

## ACKNOWLEDGMENT

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## APPENDICES

Forms Used in the Test

## APPENDIX A

## Summer Camp Dialogue

The Community Planning Committee has met to plan a summer camp for the grade school and junior high school children of the community. The chairman opens the meeting:

1. "The Board of Education and the Chamber of Commerce have agreed to provide funds for a summer day camp. Now it is our problem to decide what activities shall be included in the schedule of the camp."
2. "Won't the camp take too many children from the activities and summer programs sponsored by some of our individual organizations?"
3. "Wasn't the camp suggested as a cooperative plan because the vacation programs offered by the individual organizations had proven inadequate to care for all the children in the town."
1. "Yes, a survey was taken last summer which showed that only one-third of the children between the ages of 6 and 14 were in the various vacation programs offered by these groups. Nearly all the rest had nothing to do and were getting into trouble."
4. "The little vandals should be sternly disciplined and made to see the error of their ways."
5. "Some of them tore up part of my garden in spite of my scolding. They need to be kept in school during the summer so decent people can have some peace."
3. "At least we all recognize that children need an outlet for their energy in the summer time. Now what occupation would be appropriate in a camp schedule?"
2. "There should be a compulsory citizenship course."
4. "Of course there will have to be rules of discipline."
5. "Let's not waste the taxpayer's hard-earned money on useless occupations."

## Appendix A (Cont.)

1. "Miss Arnold, the guidance worker at the junior high school, can be hired as director of the camp. She has had quite a bit of experience with children and suggested that each day be started with a devotional service conducted by the campers."
3. "There's a chapel on the grounds. A daily devotional service would give the children a chance to learn more about leadership in group programs."
4. "Letting the children conduct their own services would be encouragement for them to get more out of hand."
2. "The junior high children have been trying to lead their own assembly programs. They're willing but need more practice. If they conducted devotional services every day, the school might profit."
5. "I make a motion that we adopt the plan of starting each camp day with a devotional service conducted by the children."

3. "I second the motion."

The motion is carried with an opposing vote from 4.

4. "I don't think we should sponsor an activity that will encourage the children to be less obedient."
5. "How much is this camp going to cost? Will it increase our taxes?"
1. "The Board of Education plans to hold the regular summer school and the camp on the same grounds as an economy measure. The cost over the usual cost of summer school is being financed by various individuals and the Chamber of Commerce."
5. "Let's put something useful into the camp program so that the children will attend, and I can grow my garden in peace."
3. "That gives me an idea. Maybe you would be willing to help the children with something useful."
5. "I don't get along with children. They walk across my garden."
3. "I believe they tore up your garden last year because they were disappointed when they had to give up their gardens."

## Appendix A (Concl.)

5. "I don't understand."
1. "Last year the children were given some plots of ground to make gardens. The plan was a part of the school program but it ended with the spring semester."
3. "The children have gardens again this year. You always take prizes with your vegetables at the garden show. If you would be willing to use a couple of hours each day with the children, I'm sure we could arrange for them to have the plots all summer."
2. "That sounds like a good idea, and it's certainly useful."
1. "Would you be willing to help?"
5. "Well, I noticed the children's plots last year. They seemed neat and well tended. This town needs more junior gardeners. Yes, I'll do it."
1. "Good. That gives us two definite things in the camp program. We have several months to complete plans, and our time is up tonight. Our next meeting will be one week from tonight."

## APPENDIX B

## Teen Club Dialogue

The Community Planning Committee of our town has met to plan a Teen-club. The funds and equipment are to be provided by the various organizations of the community, each of which has been asked to select a member of the Committee. Six representatives are present and take part in the discussion which is opened by the chairman.

1. "The City Fathers have donated a building to be used as a Teen-club. We have been asked to outline a tentative program for the club so that the organizations which we represent may start their plans to provide the necessary funds and equipment for the club."
2. "Many people in the community, including quite a few from my organization, are not in favor of a Teen-club."
3. "That's right. Why should we give hard-earned money to a plan that's going to fail?"
4. "Of the five teen-age clubs started in this part of the state during the past year three have failed completely and the other two are going downhill rapidly."
5. "The principle behind the club idea is wrong. Teen-agers are little rebels; they won't listen to reason long enough to have a successful club."
6. "I believe the other clubs have failed because there was too much adult 'reasoning' and not enough adolescent participation. We're making a big mistake by attempting to plan a club and then give it to the young people. They would be more interested if they could do the planning."

## Appendix B (Cont.)

5. "That's absurd. In the first place teen-agers are too lazy to do any successful planning, and what sort of a hoodlum hangout would you have if they planned it?"
6. "Our high school won the state championship in the School Ground Improvement Contest, and the improvements were planned and carried out entirely by the students."
1. "It seems that we have two issues before us; first, do we want a Teen-club, and second, who shall plan such a club? We will all have to cooperate if we settle these issues satisfactorily."
2. "Why do the City Fathers think a Teen-club is necessary?"
6. "Because of the recent waves of stealing and vandalism by teen-agers."
3. "Yes, there needs to be some form of constructive recreation to fill their leisure time. But would the Teen-club be successful?"
4. "Why are the clubs in this area such a complete failure?"
5. "Probably lack of strong enough leadership among the adults."
1. "The survey made among the teen-age members of those clubs seems to indicate that the adult leadership was too strong. The young people had no part in running the clubs and resented being treated 'like children'."
2. "The evidence seems to show that the young people need a more constructive recreational program and that they would prefer to run their own show."
3. "But are they capable?"
4. "The Student Government at the high school is most efficient. Also, in other phases of school planning, the teen-agers seem to be very capable."
5. "Of course they would be capable in school because there are numerous adults around to lead and correct them."
6. "As I understand it, the adults in the school never take part in the student planning groups except by special invitation from the students."

## Appendix B (Concl.)

2. "I move that we put the problem of constructive leisure time activities to the teen-agers themselves, and let them decide whether or not the activities shall be in the form of a club."
  4. "I second the motion."
  1. "The motion has been made and seconded. We will vote by our usual oral method."
- The vote is taken, and all are in favor except No. 5.
5. "I'm wholly in favor of the Teen-club, but I don't think adolescents have enough sense to handle such problems by themselves."
  1. "The time is up for tonight. Our next meeting will be two weeks from tonight at which time we will have a report on the plans of the teen-agers."

## APPENDIX C

## Relief Program Dialogue

The Community Planning Committee has called a meeting for the purpose of working out a plan of relief for the handicapped, poverty-stricken, and orphans in the community. Five members of the committee attended and participated in the discussion. The chairman opens the meeting:

1. "Recently public sentiment has been so strongly against the drives for money for numerous causes in this community that the City Commission has asked us to work out a community plan for raising money for the relief of the needy."
2. "How would such a plan work?"
1. "The details are up to us, but the idea behind the plan is that all of the various relief agencies be centered in one group making only one money raising campaign each year."
3. "Such a plan would adversely affect the various relief groups we now have by making them either lazy or rebellious."
4. "In the communities where such a plan has been tried, it has served to make relief groups more active and efficient."
5. "Just because it worked somewhere else is not sufficient reason for it to work here."
2. "What evidence is there that such a plan is needed?"
1. "The relief agencies have reported that their campaigns have raised less money each year for the past three years in spite of the increased prosperity, and the City Commission and Chamber of Commerce have received numerous complaints from citizens concerning the many drives for money."

## Appendix C (Concl.)

4. "Last year I counted the campaigns, and the average was more than one drive each month."
3. "A campaign each month keeps the public thinking about the problem of relief and gives the agencies some much needed publicity."
4. "It seems that with a little cooperation there could be money enough for all the agencies and publicity in a less antagonistic form."
2. "Could the agencies be persuaded to cooperate?"
5. "Probably not; they wouldn't care to lose their identity in the melting pot of a common hub agency."
2. "How does the plan work in other places?"
1. "The usual method is for all the relief groups to become members of a central agency. As members, they are required to maintain a certain standard of efficiency and may participate in the annual fund raising drive. The proceeds are divided among the agencies in accordance with their needs."
5. "Let's make such a plan for this community and see if the various agencies will accept it when it is presented to them."
3. "If they do, they won't have any sovereignty over the management of their own groups. Every move will have to be approved by the other members."
2. "What will be the starting point for our plan?"
4. "I think we all need more information. It would be wise to get some literature from the library and discover what specific techniques have worked the same size as ours."
5. "That's a good idea."
1. "Our time is up. Let's each collect some literature and study up on plans that are similar to what we want. Each one can in that way bring some new ideas to our next meeting, one week from today."

## APPENDIX D

## Directions for Character Evaluation

Instead of your own name, please make up an alias or fictitious name that you can use on each rating.

Alias \_\_\_\_\_ Date \_\_\_\_\_

In the attached minutes of the meeting of the Community Planning Committee, each individual is indicated throughout by a number instead of a name. Read the minutes carefully so as to get a picture of each individual. When you have done so, indicate by a check mark each participant whom you would select if you were picking people to work with you on a similar committee. Pick as many or as few as you think would make good committee members.

Speaker No. 1 \_\_\_\_\_

Speaker No. 2 \_\_\_\_\_

Speaker No. 3 \_\_\_\_\_

Speaker No. 4 \_\_\_\_\_

Speaker No. 5 \_\_\_\_\_

Speaker No. 6 \_\_\_\_\_

## APPENDIX E

## Directions for Character Rating Device

Instead of your own name, please make up an alias or fictitious name that you can use on each rating.

Alias \_\_\_\_\_ Date \_\_\_\_\_

## PERSONALITY TRAITS AND GROUP MEMBERSHIP

Some experimenters believe that group membership gives a person such definite personality characteristics that it is possible to determine the groups with which one is most closely identified by a study of a person's speech and actions. We wish your cooperation in further testing this proposition. Please read the material and carry out the directions.

Each important organization in a small community was asked to select an individual to represent it on a Community Planning Committee. Each organization made such a selection, but not all were present and participating in any meeting. In the meeting reported on the attached sheets several members participated. Each is indicated throughout the meeting by a number instead of a name.

Read the discussion carefully so as to get a mental picture of each of the participants. When you have done this, identify the group to which each individual most probably belongs by putting his number at the left of the group you think he represents.

<input type="checkbox"/> Rotary Club	<input type="checkbox"/> Police Department	<input type="checkbox"/> Methodist Church
<input type="checkbox"/> P.T.A.	<input type="checkbox"/> Baptist Church	<input type="checkbox"/> Board of Education
<input type="checkbox"/> Lutheran Church	<input type="checkbox"/> Christian Church	<input type="checkbox"/> Presbyterian Church
	<input type="checkbox"/> Chamber of Commerce	

## APPENDIX F

## Organization Rating Scale

Alias \_\_\_\_\_ Date \_\_\_\_\_ Class \_\_\_\_\_

1 always cooperative    2 fairly cooperative    3 mildly cooperative  
4 inclined to be uncooperative    5 definitely uncooperative  
6 always uncooperative

Think of someone you know who is a member of the Rotary Club and whom you consider a fairly representative member of that organization. Now, using the scale above, rate this particular individual by use of the appropriate numbers in accordance with the way you would expect him to act in each of the following situations: planning a summer recreation program for the children of a whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty stricken, and orphans; providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

Select a similar member of the P.T.A. and rate this individual in the same manner: planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty stricken and orphans: providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

Select similarly a member of the Lutheran church and rate this member on the following activities: planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult educational program in the high school.

Select in like manner a member of the Police Department and rate his probable responses: in planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

## Appendix F (Concl.)

Select similarly a member of the Baptist church and rate his probable responses: planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

Select in like manner a member of a Chamber of Commerce and rate his probable behavior: in planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

Select similarly a member of the Christian church and rate his probable behavior: in planning a summer recreation program for the children of the whole community; planning an Old Settler's picnic; establishing a community plan of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult education program in the high school.

Select in the same way a member of the Methodist church and make a similar rating: planning for summer recreational program for the children of the whole community; planning an Old Settler's picnic; establishing a community program for the relief of the handicapped, poverty-stricken and orphans; establishing an adult education program in the high school.

Now select a member of the Presbyterian church and rate his probable responses: planning for a summer recreational program for the children of the whole community; planning for an Old Settler's picnic; establishing a community program of relief for the handicapped, poverty-stricken and orphans; providing funds and equipment for a teen-age club; establishing an adult educational program in the high school.

## APPENDIX G

## Personal Data Sheet

Alias \_\_\_\_\_ Date \_\_\_\_\_ Sex \_\_\_\_\_ Age \_\_\_\_\_

Encircle last grade of school completed. 1 2 3 4 5 6 7 8 9 10 11 12  
 College 1 2 3 4 Grad. Work Other schooling \_\_\_\_\_

Were you reared on a farm? \_\_\_\_\_ If not, give approximate population  
 of your home town. \_\_\_\_\_

What was your father's occupation \_\_\_\_\_

Are you married? yes \_\_\_\_\_ no \_\_\_\_\_ Approximate annual family income \_\_\_\_\_

If a student, give college \_\_\_\_\_ and major subject \_\_\_\_\_

Have you or any member of your family been a member of a board  
 of education \_\_\_\_\_, police department \_\_\_\_\_, Parent-Teacher  
 Association \_\_\_\_\_, Chamber of Commerce \_\_\_\_\_, Rotary Club \_\_\_\_\_?

What is the denomination of your choice? \_\_\_\_\_ Are you a member? \_\_\_\_\_

Do you attend church every week \_\_\_\_\_, about once a month \_\_\_\_\_, once  
 or twice a year \_\_\_\_\_, never \_\_\_\_\_?

Your father's denominational choice was \_\_\_\_\_, your mother's \_\_\_\_\_.

Check the organizations to which you have belonged.

\_\_\_\_ Boy Scouts

\_\_\_\_ Campfire Girls

\_\_\_\_ Girl Scouts

\_\_\_\_ Y.M.C.A.

\_\_\_\_ 4-H Club

\_\_\_\_ Y.W.C.A.

\_\_\_\_ Hi-Y

\_\_\_\_ Armed Forces

\_\_\_\_ Girl Reserves

\_\_\_\_ Overseas service